

pixels in the raster image to achieve undercolor reduction by reducing only a value corresponding to a reduced amount of an underlying marking material, as recited in claim 1 or the similar features recited in claims 10 and 23.

Motta relates to a digital color printer which has undercolor removal and error diffusion procedures to enable improved gray scale representations (col. 1, lines 8-14). In Motta, a host processor 10 includes a CPU 12 which communicates with a random access memory (RAM) 14 via a bus 16. The RAM includes an undercolor removal procedure 36 that enables the gray content of each pixel and the color image stored in image planes to be determined and then utilized to determine which gray scale pixel locations of the image should be printed (col. 4, lines 27-38).

The CPU 12 converts RGB color to C, M and Y color values. Before the respective C, M, Y and K planes are passed to the CPU 22 and a printer 20, they are subjected to at least two procedures which enable an adjustment of the values of the respective colors to improve the gray scale representation in the image. Those procedures are undercolor reduction (UCR) 36 and an error diffusion procedure 40 (col. 4, lines 44-64).

The undercolor reduction procedure is illustrated in Figs. 2, 3 and 4. As shown in Fig. 2, the undercolor reduction procedure begins at step 50 and is applied to each pixel in order and across the entire raster image. The UCR procedure begins by finding "a minimum value for each of the C, M or Y values corresponding to a pixel location." The minimum value is the gray component of the pixel location color and is subtracted from each of the C, M, and Y values to obtain C', Y' and M' pixel color values. The procedure shown in box 52 is illustrated in Fig. 3 as a representative pixel having C, M, and Y components 70, 72 and 74 respectively. In the example shown in Fig. 3, the M component 72 is the minimum value and therefore its value is subtracted from each of the C, M and Y components, resulting in a C' component 76 and a Y' component 78 (col. 4, line 65 - col. 5, line 14).

Thus, the undercolor reduction process of Motta, reduces a value of each of the color components C, M and Y in an effort to achieve the stated objective of Motta of improving the gray scale presentation in an image. Therefore, Motta fails to disclose the feature of reducing only a value corresponding to a reduced amount of an underlying marking material. Rather, Motta clearly recites that the values of each of the C, M and Y components are reduced. Moreover, from the description of Motta, there is no way to determine which of the color components correspond to the "underlying" marking material recited in the rejected claims.

As stated above, the RAM 14 includes an undercolor removal procedure, as well as a error diffusion procedure. The two procedures assure that a K dot and a C, M or Y dot will not be overprinted in any one pixel location. The processes further prevent overprinting of C, M and Y dots in any one location. Thus, Motta further fails to disclose raster image processing including overmarking processing that allows both the at least one first color and the second color to be separately included in the overmarked pixels and the same raster image. (See also claim 3 at col. 8 of Motta). Therefore, it appears that Motta seeks to prevent overmarking of any type.

As Motta fails to disclose each and every feature recited in the rejected claims, withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

II. Claim Rejections Under 35 U.S.C. §103

Claims 6-9, 15-18 and 20 are rejected under 35 U.S.C. §103(a) as unpatentable over Motta in view of U.S. Patent No. 5,731,823 to Miller et al. (Miller). This rejection is respectfully traversed.

Neither Motta or Miller, whether considered alone or in combination, disclose or suggest each and every feature recited in the rejected claims. Moreover, claims 6-9, 15-18 and 20 are allowable for their dependency on their respective base claims for the reasons discussed above, as well as for the additional features recited therein

Additionally, as pointed out numerous times in previous responses to Office Actions, Miller is silent regarding overmarking or undercolor reduction. Rather, Miller pertains only to optimizing controllable parameters relating to producing printed material on a hard copy output device (col. 1, lines 8-10). Thus, Miller pertains more specifically to optimizing color matching between the colors displayed on a CRT monitor and a printed hard copy of that image (see, for example, col. 3, line 35 - col. 4, line 60).

Miller also discloses that rasterizing may be conducted in a variety of conventional manners known to those skilled in the art, such as choosing a resolution which yields a selected optimum balance of throughput and print quality (col. 5, lines 35-39). Although Miller discloses that statistics may be collected regarding the selected image that includes recording in which black objects touch color objects, Miller discloses only obtaining such statistics for use in "bleed control" (col. 6, lines 38-47). For instance, if "black to color bleed control" is to be handled on an object by object basis, then black objects that touch color or fall within color regions may have colors modified by step 92. In this case, step 92 ensures the images are printed with the correct combination of C, M, Y and K to provide a good quality black without bleeding into the "processed black" of the color regions (col. 7, lines 35-45). Thus, Miller is silent regarding the features recited in the rejected claims which are admittedly deficient in Motta.

Additionally, as Miller does not relate to such overmarking or undercolor reduction, there is no motivation or suggestion to make the combination as proposed in the outstanding Office Action. Accordingly, withdrawal of the rejection of claims 6-9, 15-18 and 20 is respectfully requested.

III. Piecemeal Examination

It is respectfully submitted that Applicants have been prejudiced by piecemeal examination of this application resulting in undue delay in prosecution of this application and

unwarranted additional expense to Applicants. For example, the claims of this application were last substantively amended in view of prior art on May 14, 2004. Since then only two claim amendments were conducted to cancel one claim and add an additional claim.

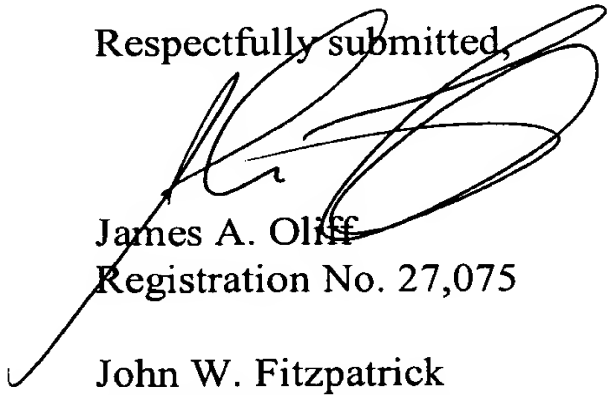
However, the cancellation and addition of such claims has not been the basis of a new Office Action or additionally applied references. Since the claim amendment conducted on May 14, 2004, there have been seven subsequent responses to Office Actions in which no further claim amendments were provided. Accordingly, Applicants respectfully request the conclusion of examination of this application and the issuance of a Notice of Allowance.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-21 and 23 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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